

Operations & Maintenance

User Needs

- Infrastructure Management
- Roadway Condition Monitoring
- Safety Management
- Resource Management
- Security
- Public Fleet Management
- Data Collection & Sharing

Stakeholder Partners

Who are they?



Applicable Technologies

- Road Weather Information System
- Inter-Agency Coordination
- Automated Vehicle Location
- Computer Aided Dispatch
- Collision Warning Devices
- Lane Positioning Devices
- Automated Deicing System

Projects

- Bridge Deicing
- Advanced Snowplow
- Advanced Rotary Blower
- Telerobotic Trash Collector
- Automated Litter Bag/Debris Collector
- Highway Cone Placement & Retrieval Vehicle
- Teleoperated Maintenance
- Frontier Lighting Monitoring System

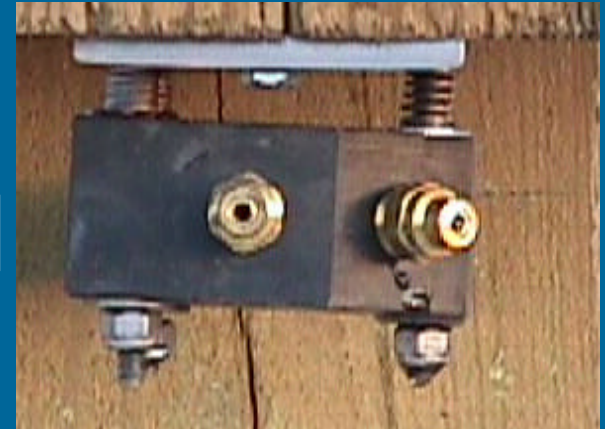
Bridge Deicing



Flush in Pavement

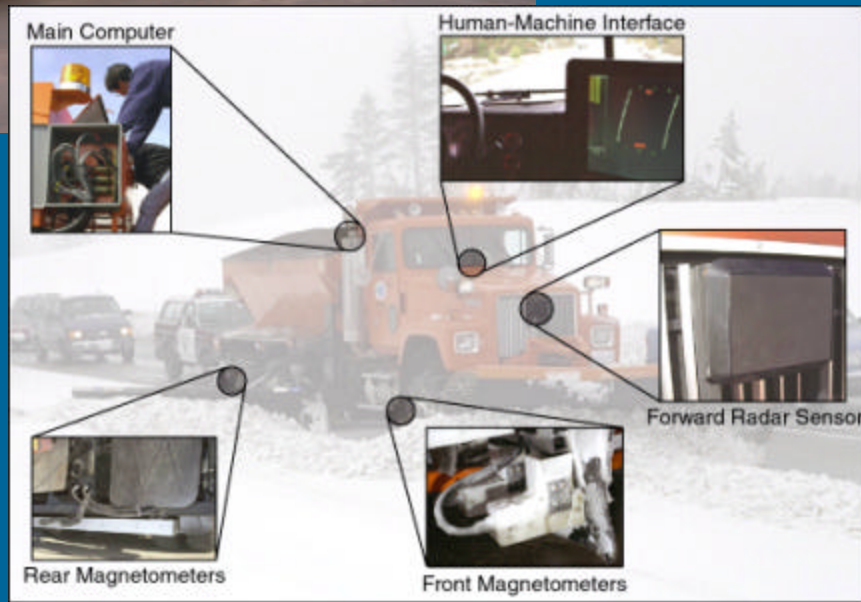


Curb & Wall



Guard Rail

Advanced Snowplow



- Lane Positioning
 - Tolerance Edge
 - Current lateral position
 - Prediction marker
- Collision Warning
 - Forward
- Partners
 - Caltrans
 - ADOT
 - UC - Berkeley
 - UC - Davis
 - WTI/MSU

Advanced Rotary Blower



- Full Automation
 - Steering
 - Throttle
 - Brake
- Forward Collision Warning
- Current Partners
 - Caltrans
 - AHMCT, UC - Davis
 - PATH, UC - Berkeley



Telerobotic Trash Collection



- Collect trash telerobotically using vacuum nozzle system
- Advanced human interface
- High-capacity trash collector
- Customizable for commercially available machines
- Rural/freeway/urban capabilities



Courtesy of MadVac

Source: <http://www.ahmct.ucdavis.edu>

Automated Litter Bag/Debris Collector



- Pickup litter bags and large debris, such as tires, from roadside.
- Hydraulic clam shell operated with joy stick using preset locations and automatic return.

Highway Cone Placement and Retrieval Vehicle



- One person, in-vehicle, totally automated placement and retrieval of highway cones
- Multiple stacking system extends range up to five miles



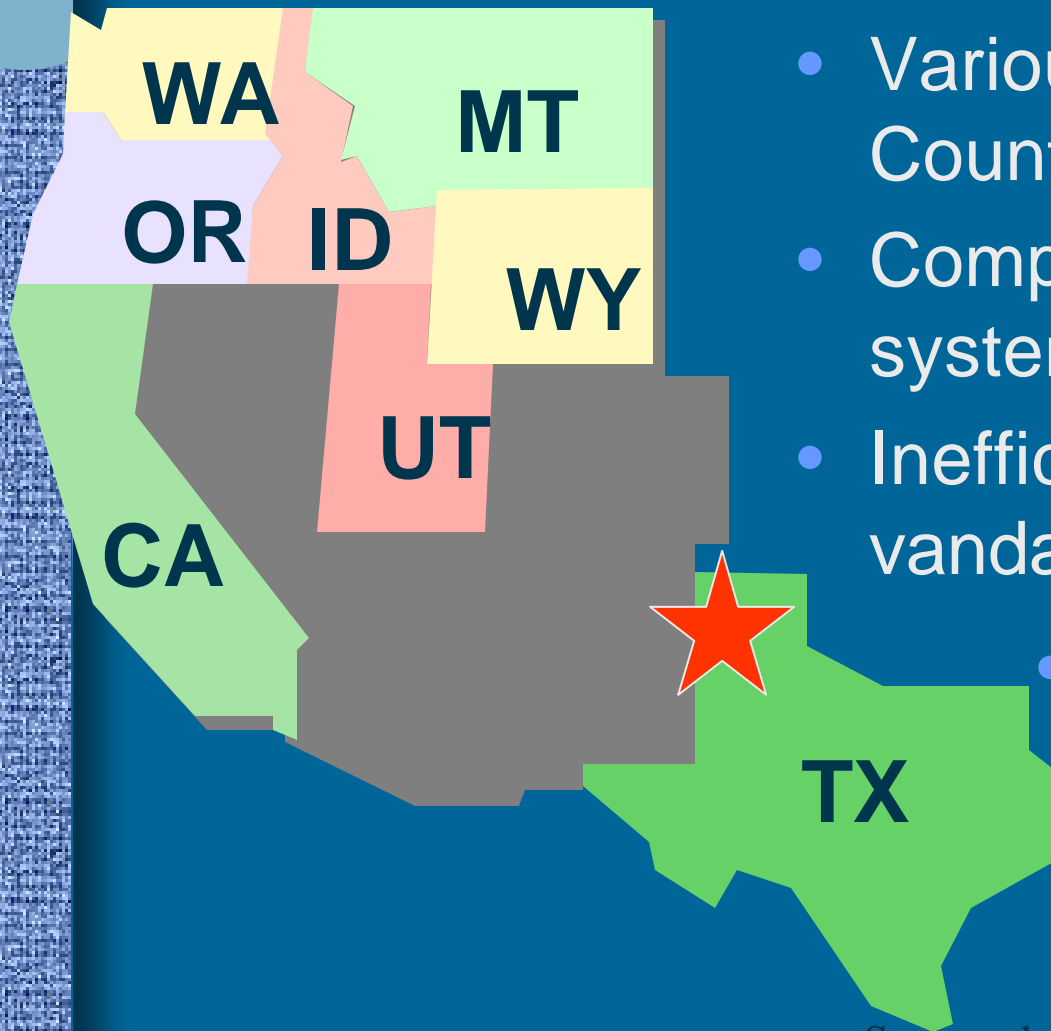
Teleoperated Maintenance

- Normal or remote operation of maintenance equipment of all types.
- Uses either backpack or truck-mounted control system.
- Suitable for dangerous situations, such as mudslides and hazardous material spills.



Source: <http://www.ahmct.ucdavis.edu>

Frontier Lighting Monitoring System



- Various sites, Oldham County
- Component failure causes system failure
- Inefficiency, safety, vandalism
- Intelligent Outdoor Lighting Control System

Source: <http://www.coe.montana.edu/wti/wti.htm>